AMENDMENTS TO THE CLAIMS

The following claims replace all prior versions and listings of claims in the

application:

1.   (cancelled)

2.   (previously cancelled)

3.   (Currently Amended)   [The method of claim 1,] <u>A method for defining tone</u>

<u>signals in a voice activity detection (VAD) device, comprising:</u>

<u>defining a threshold for zero amplitude change by determining, for a signal with a</u>

<u>zero value amplitude at a zero crossing point, a tangent value of the signal, and by</u>

<u>defining the zero value amplitude as a non-zero value depending upon the tangent of</u>

<u>said signal at the zero crossing point;</u>

<u>calculating a zero crossing rate of a signal;</u>

<u>extracting a set of parameters from a plurality of duration periods of said signal;</u>

<u>calculating a maximum difference between said plurality of duration periods;</u> and

<u>comparing said maximum difference with said threshold; and</u>

<u>declaring a sample of the signal as containing a tone when the maximum</u>

<u>difference is not greater than the threshold;</u>

wherein said defining comprises defining the threshold as one if the signal has

no zero amplitude change, and defining the threshold as two if the signal has a zero

amplitude change.

Claims 4-8 cancelled.

9.   (withdrawn)

10.   (cancelled)

11.   (withdrawn)

12.   (cancelled)

13.   (withdrawn)

14.   (cancelled)

15.   (withdrawn)

16.   (cancelled)

17.   (Currently Amended)   [The method of claim 1,] A method for defining tone

signals in a voice activity detection (VAD) device, comprising:

defining a threshold for zero amplitude change by determining, for a signal with a

zero value amplitude at a zero crossing point, a tangent value of the signal, and by

defining the zero value amplitude as a non-zero value depending upon the tangent of

said signal at the zero crossing point;

calculating a zero crossing rate of a signal;

extracting a set of parameters from a plurality of duration periods of said signal;

calculating a maximum difference between said plurality of duration periods; and

comparing said maximum difference with said threshold; and

declaring a sample of the signal as containing a tone when the maximum

difference is not greater than the threshold;

wherein the calculating the zero crossing rate comprises:

analyzing the sample to determine if an amplitude of a signal sample is zero at a

zero crossing point;

when the amplitude is zero at the zero crossing point, determining a tangent of a

signal wave of the signal sample at the zero crossing point;

changing the signal amplitude from zero to negative one if the tangent is

negative; and

changing the signal amplitude from zero to positive one if the tangent is positive.

18.   (cancelled)

19.   (cancelled)

20.   (Currently Amended)   [The method of claim 4, further comprising:] A device

for defining tone signals for voice activity detection (VAD), comprising:

a processor that is programmed to:

define a threshold for zero amplitude change;

calculate a zero crossing rate of a signal;

extract a set of parameters from a plurality of duration periods of said signal;

calculate a maximum difference between said plurality of duration periods; and

compare said maximum difference with said threshold

calculating a zero crossing rate wherein the signal has a zero amplitude change

at a zero crossing by:

analyzing the sample to determine if an amplitude of a signal sample is zero at a

zero crossing point;

when the amplitude is zero at the zero crossing point, determining a tangent of a

signal wave of the signal sample at the zero crossing point;

changing the signal amplitude from zero to negative one if the tangent is

negative; and

changing the signal amplitude from zero to positive one if the tangent is positive.